



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

OFFICE OF RADIATION PROTECTION

309 Bradley Blvd., Suite 201 • Richland, Washington 99352

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AIR 17-301
Audit 1182

March 2, 2017

Mr. Doug Shoop, Manager
United States Department of Energy
Richland Operations Office
P.O. Box 550, MSIN: A5-14
Richland, Washington 99352

Re: Closeout of Inspection (Audit 1182) for Waste Encapsulation Storage Facility (WESF)
(various emission units – see enclosed report)

Mr. Shoop:

The Radioactive Air Emissions Section (RAES) inspected various emission units (EUs) at WESF to determine compliance with the Radioactive Air Emissions License (FF-01) and Washington Administrative Code (WAC) 246-247. The purpose of the inspection was to validate information needed to demonstrate compliance to requirements referenced in the license for these EUs and WAC 246-247.

There were no issues noted during the inspection and Audit 1182 is closed upon receipt of this letter. However, requested air sample results must still be provided when completed (see enclosed report, page 3, "Additional (Ad Hoc) Agenda Items," number 1).

The RAES inspections concentrate on select key compliance issues, but not necessarily all regulations or license conditions due to time constraints. The RAES inspections, alone, are not to be used to demonstrate compliance with FF-01.

If you have questions regarding this letter, please contact Thomas Frazier at Thomas.frazier@doh.wa.gov or (509) 946-0774.

Sincerely,

John Martell, Manager
Radioactive Air Emissions Section

cc: (see next page)



cc: Ruth Allen, WRPS
Matthew Barnett, PNNL
Lilyann Bauder, Ecology
Shawna Berven, WDOH
Lucinda Borneman, WRPS
Lee Bostic, BNI
Jerry Cammann, MSA
Frank Carleo, CHPRC
Cliff Clark, USDOE-RL
Jack Donnelly, WRPS
Dennis Faulk, EPA
Eric Faust, USDOE-RL
Thomas Frazier, WDOH
Gary Fritz, MSA
Philip Gent, Ecology
Michael Greene, WRPS
Daniel Heuston, Ecology
Reed Kaldor, MSA
Paul Karschnia, CHPRC
Jim McAuley, EPA
Katie McClintock, EPA
John Schmidt, WDOH
Jeff Voogd, WRPS
Joel Williams Jr., CHPRC
Environmental Portal
RAES Tracking: Line 16-196; EUs 340 & 1426-1432; NOCs 981, 1004-1009, & 1011

**Washington State Department of Health
Office of Radiation Protection - Radioactive Air Emissions Section**

AUDIT/INSPECTION REPORT

Audit Number: 1182

Facility/Building(s): WESF

Emission Unit(s):

EU 340	NOC 981
EU 1426	NOC 1004
EU 1427	NOC 1005
EU 1428	NOC 1006
EU 1429	NOC 1007
EU 1430	NOC 1008
EU 1431	NOC 1009
EU 1432	NOC 1011

Facility Contact(s): Tad Karschnia / Eric Faust (USDOE-RL)

RAES Inspector(s): Tom Frazier

Purpose of Visit: The purpose of the inspection is to validate information needed to demonstrate compliance to requirements referenced in the license (FF-01) for this emission unit and WAC 246-247.

Pre-Inspection Activities: Review of FF-01 license and previous inspections.

Date of Inspection: 10-26-16

Agenda

Item No.

AGENDA ITEM(S)

References

1. **Verify all control technology is present and operational during walk down of the emission unit, per the FF-01 license.**

WAC 246-247-040(5), WAC 246-247-075(2), CFR 61.93(b) (4) (i))

Performed visual inspection of the main stack for the WESF Facility 296-B-10 (EU 340); sampling cabinet; K3N and K-1 ventilation systems. No issues identified.

Performed visual inspection of the WESF gallery to confirm that the only hot cells operating were F and G, which was the case.

Requested documents:

ABCASH Total Alpha and Beta Sample data 296-B-10

2C-16-03166; K-3:

- *DPI-4E 5-10-15*
- *DPI-4E 8-10-15*

2C-00604; K3:

- *DPI-W4*

2C-16-03166; K-3

2C-15-04316-Sig 4E

2. Provide documentation of all monitoring and testing requirements (40 CFR 61, Appendix B Method 114).

WAC 246-247-040(5)]

Reviewed documents; no issues.

Requested documents:

2C-16-01479:

STACK Sample Probe Inspection for Cleanliness completed 05/04/16. Inspect probe and swap with second clean probe that is held in storage. Leak Detection Test and Sample Line Leak Test. Vacuum Test for 5 minutes.

2C24023:

Sample alignment

Check for present of deposits and foreign materials

Leak test sample line

Ultrasound testing sample probe prior to installation

Post probe inspection for installation as spare probe for next year

Stack air flow test completed 05/31/16

3. Provide most recent work package containing filter DP gauge calibration records.

WAC 246-247-040

K1 – K3 Duct air flow total by measuring K1 and K3 Pual? No flow element in stack!! Then sum it up.

Stack air flow test – measure exhaust flow K1 and K3

- *K3- flow South 35,511 ft./min*
- *K3 – flow North 34,614 ft./min*
- *K1 – flow 23,759 ft./min*

Pitot tube calibration passed.

K1 and K3 flow for 296-B-10 = 19,314 dated 05/31/16.

Stack radiation record 2C-16-00435:

Record stack 296-B-10 measured readings from 100 to 100,000 (cpm) with lower detection limit of 158 cps.

2C-16-00438-2C-00344:

Flow totalizer calibrated on 04/26/16.

EL-15-00449-2002058:

Functional Test – Monthly dated 02/11/15 EL-15-00449-1C-02058.

2C-16-02923:

In stack monitoring system.

Data sheet # 2C-02058. Checked to see that it responds to source.

Loop Calibration K3N – Stage Five Data Sheet.

Construction work package June 7, 2016 – Initial calibration pressure transmitter.

PM 2C-32157:
2C-32157 PDI-225-BB-K3N-003
PDI-225-BB-K3N-003

Controlled on HP #2db – calibration no gauges; just transmitter 2C-32151.

Get latest schematic for John Martell

No issues.

Additional (Ad Hoc) Agenda Items:

1. *Provide air sample results from the start of the K1N Ventilation Upgrade project to present date 11/07/16 for emission units:*

- 1426 (NOC 1004)
- 1427 (NOC 1005)
- 1428 (NOC 1006)
- 1429 (NOC 1007)
- 1430 (NOC 1008)
- 1431 (NOC 1009)
- 1432 (NOC 1011)

AS OF 03/02/17 THESE SAMPLE RESULTS HAVE NOT BEEN PROVIDED.

2. *Provided latest as built drawing(s) of WESF facility Ventilation system(s):*

- H-2-836665 WESF Stab/K3N Vent Civil Site Plant Sheet 1, Rev 1
- H-2-836665 WESF Stab/K3N Vent Civil Enlarged Site Plan, Sheet 2, Rev 2
- H-2-836673 WESF K3N Ventilation Mechanical General Arrangement, Sheet 1, Rev 4
- H-2-836674 WESF K3N Ventilation Mechanical Enlarged Plan, Sheet 2, Rev 5
- H-2-836674 WESF K3N Ventilation Mechanical Details, Sheet 4, Rev 3
- H-2-836675 WESF K3N Ventilation Mechanical Truckport Enlarged Plan, Sheet 1, Rev 2
- H-2 836687 WESF K3N Ventilation Instrumentation Legend and General Notes, Sheet 1, Rev 5
- H-2 836687 WESF K3N Ventilation Instrumentation Heater P&ID, Sheet 2, Rev 3
- H-2 836687 WESF K3N Ventilation Instrumentation Air Flow Pad, Sheet 3, Rev 3
- H-2 836687 WESF K3N Ventilation Instrumentation EXHAUST Flow P&ID, Sheet 4 Rev 2
- Flanders/CSC BF-Series and KF-Series Containment Housings PB-2001-0610 – Gel Seal Filter Housings Bag-Out or Non-Bag-Out Applications

3. *Provided copy of work package dated June 7, 2016 – Initial calibration pressure transmitter:*

- PM/S Activity 2C-32157 Calibrate Transmitter Engineering Redline/Strikeout Working Copy 06-07-2016
- PM/S Activity 2C-32158 Calibrate Current Sensing Switch Engineering Redline/Strikeout Working Copy 06-07-2016
- PM/S Activity 2C-32159 Calibrate Current Sensing Switch Engineering Redline/Strikeout Working Copy 06-07-2016
- PM/S Activity 2C-32198 Calibrate PDI-225B-K3N-003A Engineering Redline/Strikeout Working Copy 06-07-2016
- PM/S Activity 2C-32199 Calibrate PDI-225B-K3N-003 Engineering Redline/Strikeout Working Copy 06-07-2016

Comments:

None.